

QUERI currently focuses on nine conditions that are prevalent and high-risk among veterans: Chronic Heart Failure, Diabetes, HIV/Hepatitis, Ischemic Heart Disease, Mental Health, Polytrauma and Blast-Related Injuries, Spinal Cord Injury, Stroke, and Substance Use Disorders.

Type 2 diabetes affects nearly 20% of veterans who use the VA health care system, or more than one million veterans at any given time. Diabetes is a leading cause of blindness, end-stage renal disease, and amputation in the US, with at least three-quarters of non-traumatic amputations in VA involving patients with diabetes. Further, up to 80% of patients with diabetes will develop or die from macrovascular disease, such as heart attack and stroke. While there is a growing array of therapeutic options and efficacious treatment strategies to prevent or delay some of the most severe diabetes-related complications and enhance quality of life, there remain significant gaps in the use of these treatments. Consequently, the Diabetes Mellitus-QUERI (DM-QUERI) is committed to research and collaborations with key VA and non-VA partners to promote the use of effective care strategies that will decrease the number of patients who experience complications of diabetes, thereby helping veterans with diabetes live longer and better lives.

The work of DM-QUERI and other essential VA offices and programs, such as Patient Care Services, the Office of Quality and Performance, and the VA Healthcare Analysis and Information Group, have led to significant improvements in VA diabetes care quality over the past 5-10 years. These improvements are known to translate into fewer deaths and serious complications. Nonetheless, more needs to be done. Blood pressure control remains subopti-

mal, preventable instances of visual loss and amputations occur too frequently, and patients need more help with self-management and dealing with co-morbid chronic conditions.

Diabetes Mellitus Quality Enhancement Research Initiative

The Diabetes Mellitus Quality Enhancement Research Initiative (DM-QUERI) uses the QUERI process (see back page) to improve the quality of care and health outcomes of veterans with diabetes, and to produce information on disseminating and implementing practices that are deemed essential for effective diabetes care. The overarching goal for DM-QUERI is reducing preventable morbidity and mortality among veterans with diabetes. Specific priority areas include:

- Optimizing management of cardiovascular risk factors,

- Decreasing rates of diabetes-related complications (i.e., visual loss, lower-extremity ulcers and amputation, and kidney disease),
- Improving patient self-management,
- Enhancing management of patients with diabetes and other chronic co-morbid conditions, and
- Advancing clinically-meaningful quality/performance measurement to promote quality improvement and assess the results of quality improvement interventions.

DM-QUERI Projects and Findings

DM-QUERI conducts a diverse portfolio of projects to facilitate the implementation of research findings and evidence-based recommendations within routine clinical practice. The following projects are examples of how DM-QUERI is addressing the above priority areas.

The DM-QUERI Executive Committee

Each QUERI Executive Committee is co-chaired by a research expert and a clinician. The research coordinator for DM-QUERI is **Eve Kerr, MD, MPH**, and the clinical coordinators are **Leonard Pogach, MD** and **David Aron, MD, MS**. This Executive Committee includes other experts in the field of diabetes mellitus: Amy Butchart, MPH (Administrative Coordinator); Ed Chaney, PhD; Claude Cowen, MD; Fran Cunningham, PharmD; Linda Haas, RN, CDE, PhD Candidate; **Mary Hogan, PhD, RN** (co-Implementation Research Coordinator); Linda Kinsinger, MD, MPH; Susan Kirsh, MD; **Sarah Krein, PhD, RN** (Co-Research Coordinator); **Julie Lowery, PhD** (co-Implementation Research Coordinator); Michael Miller, MD, PhD; Gayle Reiber, PhD, MPH; Anne Sales, PhD, RN; Joseph Selby, MD, MPH; and Ruth Weinstock, MD, PhD.

Adherence and intensification of medications (AIM) implementation study

Blood pressure control is a critical component of diabetes care. Poor blood pressure control leads to serious and preventable complications, and results in higher rates of morbidity and mortality. Both poor patient adherence to anti-hypertensive medications and clinicians' failure to initiate or intensify medications contribute significantly to these adverse outcomes. To address this problem, DM-QUERI is designing and piloting an intervention that proactively identifies and targets patients with high blood pressure and poor medication adherence, and combines two effective approaches to improving blood pressure control: tailored adherence counseling and medication management by a clinical pharmacist.

Telephone peer support for insulin management

VA diabetes patients often have difficulty managing their self-care and accessing clinic-based services; many also lack social support to help them meet the demands of their illness. Enhanced support is very important for patients who are undertaking and sustaining new challenging self-care tasks, such as initiating or intensifying insulin treatment regimens. DM-QUERI investigators are implementing and evaluating an intervention that uses a low-cost interactive voice response (IVR) exchange system to promote peer-to-peer communication among veterans with diabetes who are initiating or increasing insulin therapy under medical guidance.

Influence of chronic pain on diabetes care and self-management

More than 60% of VA primary care patients report having chronic non-cancer pain. Given the large proportion of patients in VA with chronic pain, it is important to know how organization of care and provider training influence treatment of patients

with chronic pain conditions. DM-QUERI researchers surveyed primary care physicians concerning challenges they face in treating patients with chronic non-cancer pain. Issues identified include not having adequate training in chronic pain management principles and perceived treatment of pain conditions beyond the provider's scope of experience.

Diabetic foot ulcer treatment and amputation prevention

Approximately 15% of veterans in the VA healthcare system will develop a foot ulcer during their lifetime. Good foot ulcer outcomes improve patient mobility, function, quality of life, and ability to remain in residential settings. Veterans in different service locations receive highly variable foot ulcer care, with a wide range in the frequency and level of resultant minor and major amputations. DM-QUERI researchers are evaluating the effects of interventions in which a set of good wound care services is implemented on healing time, re-ulceration, and amputation for foot ulcer patients.

Addressing barriers to translation for treatment of hypertension

Hypertension is related to a number of diabetes complications, yet clinicians often fail to change therapy when blood pressure is elevated. DM-QUERI is leading a large observational study to better understand clinician, organizational and patient factors that may contribute to this problem. More than 100 primary care providers at 9 sites have been enrolled, as well as more than 1000 veterans with an elevated blood pressure at the time of their clinic visit. Extensive interviews will be conducted of key personnel in clinic sites involved with hypertension management. Analyses will focus on the role that competing demands, medication issues, blood pressure management issues, organizational factors, and patient-provider communication play in appropriate hypertension management.

THE QUERI PROCESS

QUERI utilizes a six-step process to diagnose gaps in performance and identify and implement interventions to address them:

- 1) Identify high-risk/high volume diseases or problems;
- 2) Identify best practices;
- 3) Define existing practice patterns and outcomes across VA and current variation from best practices;
- 4) Identify and implement interventions to promote best practices;
- 5) Document that best practices improve outcomes; and
- 6) Document that outcomes are associated with improved health-related quality of life.

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